

# Short Communications

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## Provisioning of Fledgling Conspecifics by Males of the Brood-parasitic Cuckoos *Chrysococcyx klaas* and *C. caprius*

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**ABSTRACT.**—Although post-fledging care by adult males seems unlikely in bird species that are obligate, interspecific brood parasites, there have been numerous reports of adult male *Chrysococcyx* cuckoos apparently feeding conspecific young. Most researchers currently view these observations with skepticism, in large part because *Chrysococcyx* and other cuckoo species engage in courtship feeding, and it is possible that field observers could mistake adult females receiving food from courting males for fledglings, especially given the similar appearances of females and juveniles. Here, we report an observation of an extended provisioning bout by an adult male Klaas's Cuckoo (*C. klaas*) feeding a conspecific individual with juvenile plumage and behavior, and we summarize our observations of similar occurrences in the Diederik Cuckoo (*C. caprius*) in Kenya. We suggest that the available evidence indicates that male provisioning, and hence potential parental care, is present in these brood-parasitic cuckoos at a higher frequency than currently recognized. The mechanism that causes males to associate with fledglings is unknown, but warrants further study. Received 20 December 2004, accepted 19 September 2005.

The genus *Chrysococcyx* comprises 15 species of small, Old World cuckoos (Sibley and Monroe 1990), of which all are thought to be obligate brood parasites (Davies 2000). Klaas's Cuckoo (*C. klaas*) has a wide distribution in sub-Saharan Africa, where it is known to parasitize a large number of passerine host taxa, often—but not exclusively—species of Sylviidae and Nectarinidae (Irwin 1988). Similarly, the Diederik Cuckoo (*C. caprius*) breeds throughout much of sub-Saharan Africa and has a broad range of hosts, primarily species of Ploceidae (Irwin 1988).

Over the past century, there have been numerous observations of male *Chrysococcyx* cuckoos feeding conspecifics that were thought to be fledglings (Moreau 1944, Friedmann 1968, Iversen and Hill 1983, Rowan 1983). In a literature review of provisioning behavior in brood parasites, Lorenzana and Sealy (1998) found 5 records of nestling or fledgling provisioning by Klaas's Cuckoo males and 11 such records for Diederik Cuckoo males; Friedmann (1968) discusses 12 and 15 such records, respectively, including some anecdotal reports. There is apparently only one equivalent report of a female *Chrysococcyx* cuckoo provisioning fledglings, and in that case, both the female and young were captive birds (Millar 1926, Lorenzana and Sealy 1998). Historically, a number of researchers (e.g., Moreau 1944, Friedmann 1968) considered parental care to be common in African *Chrysococcyx* cuckoos and believed that the behavior might be a primitive condition associated with a relatively recent evolutionary transition to brood parasitism. As researchers continued to document the prevalence of courtship feeding in these and other cuckoo species, more recent authorities (e.g., Rowan 1983, Irwin 1988, Lorenzana and Sealy 1998, Davies 2000) have suggested that the behavior is either misdirected courtship feeding or the result of human observers misidentifying adult females as fledglings. In practice, these and other possibilities are difficult to exclude. Although the plumages of adult African *Chrysococcyx* are highly sexually dimorphic, it is difficult to distinguish females from juveniles in the field (Rowan 1983).

Here, we report an observation of an extended provisioning bout by an adult male Klaas's Cuckoo feeding a conspecific individual with juvenal plumage and behavior, and we summarize our observations of similar occurrences in the Diederik Cuckoo. These ob-

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servations add to the body of evidence suggesting that male *Chrysococcyx* cuckoos may engage in intensive provisioning of juveniles.

#### KLAAS'S CUCKOO

Beginning at 10:08 UTC+3 on 15 August 2004, IJL, DRR, and WNW observed an adult male (by plumage) Klaas's Cuckoo in Lake Nakuru National Park, Kenya (00° 22' S, 36° 03' E). This bird was foraging at an extremely rapid rate of movement in the open canopy of a large yellow-barked acacia tree (*Acacia xanthophloea*). After watching the bird for a few minutes, we observed it deliver food to a second, sedentary cuckoo in the same tree. We noted the time, and for the next 26 min, we were able to keep both cuckoos under constant focal observation with at least one observer following each bird. This is apparently the longest-duration period of potential fledgling provisioning reported for *Chrysococcyx* (Friedmann 1968).

During our observation, the adult male cuckoo continued to forage rapidly within an approximate 40-m radius around the second cuckoo. The male returned to the second cuckoo 18 times while carrying food items, all of which appeared to be 1- to 3-cm-long lepidopteran larvae gleaned from the foliage and bark of the acacia. On 16 of the 18 visits, the second, more sedentary bird accepted and ate the caterpillar. On each visit, the adult male presented the food with his tail slightly cocked, but we observed no other conspicuous postures or behaviors potentially related to courtship. No copulations or attempted copulations occurred.

During our observation, the presumed juvenile moved among four perches, flying 3–4 m each time. These flights were notably more fluttery than those of the adult male and appeared typical of the weak flight exhibited by recently fledged birds. While perched, this bird also assumed the “fluffed” posture typical of recent fledglings, and it remained stationary between most provisioning visits. The observation ended when the presumed juvenile made a similar, but slightly longer flight into denser foliage and disappeared from our sight. Although the plumages of female and immature Klaas's Cuckoos are variable and overlap (Irwin 1988), we noted at the time that the bird being provisioned had a distinct

white patch behind the eye and a white throat marked with substantial, dark barring—plumage characters more typical of juveniles (Irwin 1988).

#### DIEDERIK CUCKOO

On 28 May 2002 at 08:23, WNW observed a male Diederik Cuckoo feeding an apparent fledgling (based on plumage) at the Mpala Research Centre, Laikipia, Kenya (00° 17' N, 36° 54' E). The fledgling was perched about 3 m above ground in a *Balanites aegyptica* tree. During 15 min of observation, the adult fed the fledgling at least four times and continued to do so when the observer left the area. On 19 May 2003 at 10:15, WNW noted similar behavior at a site 100 m from that of the first observation. During this observation, an adult male Diederik Cuckoo gleaned insects from long grass and fed them to a fledgling (based on plumage) perched on a nearby acacia. We observed the male make six feeding trips before cattle flushed the birds.

#### DISCUSSION

Based on the posture, behavior, and plumage of the Klaas's Cuckoo that we observed being fed by an adult male, it seems highly likely that it was a recently fledged bird rather than an adult female being courted. We also noted that the adult male engaged in intensive (and, presumably, energetically costly) foraging for an extended period in order to provision this individual. Friedmann (1968) considered provisioning bouts as long as 15 min as “suggestive of the fact that the catering adult was not merely indulging in courtship feeding.” Our observation of an intensive provisioning period of nearly twice that duration further supports this interpretation. In contrast, courtship feeding in *Chrysococcyx* typically involves a series of stereotyped behaviors that we did not observe: the male's presentation of food while simultaneously cocking his head and vibrating his wings and tail, postural bowing movements by the male, vocalizations by the male or both individuals, or (in some cases) subsequent copulation (Irwin 1988).

When considered in concert, our observations and those in dozens of previous reports describing equivalent behaviors suggest that males of several African *Chrysococcyx* cuckoos may provision fledglings regularly. Post-

fledging associations of adults and offspring also have been documented in other brood-parasitic taxa, such as the Brown-headed Cowbird (*Molothrus ater*; Hahn and Fleischer 1995). Indeed, previous reports have documented male Klaas's and Diederik cuckoos provisioning both pre-volant young and multiple fledglings (Moreau 1944, Friedmann 1968, Lorenzana and Sealy 1998), thus excluding misidentification of adult females as sufficient explanation for this behavior. We speculate that not only are females sometimes misidentified as fledglings, but perhaps older fledglings being provisioned by males are sometimes mistaken for females being courted. If earlier reports were correct and provisioning of fledglings by adult males is relatively common in the African *Chrysococcyx*, it raises interesting questions about the genetic relatedness of the interacting individuals and their underlying social system.

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## Widespread Cannibalism by Fledglings in a Nesting Colony of Black-crowned Night-Herons

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**ABSTRACT.**—I studied the diet and foraging behavior of fledgling Black-crowned Night-Herons (*Nycticorax nycticorax*) in a mixed-species nesting colony of Black-crowned Night-Herons and Snowy Egrets (*Egretta thula*) in New Orleans, Louisiana. In 1 of 5 years, cannibalism of nestlings that had fallen or climbed out of nests was common, accounting for 66 of 94 (70.2%) prey items taken by fledglings. Juveniles took younger conspecifics by both predation and scav-

enging. Isolated incidents of cannibalism among Black-crowned Night-Herons have been reported previously, but not on a colony-wide scale. *Received 2 December 2004, accepted 19 September 2005.*

Many researchers have studied the diets of adult and nestling Black-crowned Night-Herons (*Nycticorax nycticorax*; Bent 1926, Palmer 1962, Wolford and Boag 1971), but there are few data on the diet and foraging behavior of juveniles immediately after leaving the nest. Here, I provide the first report of wide-

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